Amendments to the Claims:

1. (Cancelled)

2. (Previously Presented) An LCAL according to Claim 3, wherein said plurality of closed-loop electrodes are disposed in a concentric circular pattern such that said plurality of closed-loop electrodes are capable of providing radial variation in the refractive index across at least a portion of said liquid crystal layer.

3. ~~(Cancelled)~~ (Currently Amended) ~~An~~ liquid crystal adaptive lens (LCAL) ~~according to Claim 1 further~~ comprising:

a reference plate;

a liquid crystal layer disposed in electrical communication with said reference plate;

a plurality of closed-loop electrodes disposed in electrical communication with said liquid crystal layer, said plurality of closed-loop electrodes adapted to receive a variable control voltage such that a refractive index of at least a portion of said liquid crystal layer is adjustable such that light passing through said liquid crystal layer is capable of being redirected;

at least one pair of conductors in electrical contact with at least two closed-loop electrodes; and

at least one connector electrically connecting at least two closed-loop electrodes and each conductor of a respective pair of conductors, wherein said at least one pair of conductors and said at least one connector are capable of providing the variable control voltage to said plurality of closed-loop electrodes.

4. (Original) An LCAL according to Claim 3, wherein said plurality of closed-loop electrodes are evenly spaced from one another such that a voltage drop between each adjacent closed-loop electrode is equal when the variable control voltage is applied across the at least one pair of conductors.

5. (Original) An LCAL according to Claim 4, wherein the at least one pair of conductors has a resistivity less than a resistivity of a respective connector.

6. (Original) An LCAL according to Claim 4, wherein said plurality of closed-loop electrodes comprise at least one subset of closed-loop electrodes, wherein each pair of conductors are in electrical contact with a respective subset of closed-loop electrodes, and wherein each connector electrically connects each closed-loop electrode of a respective subset of closed-loop electrodes and each conductor of the respective pair of conductors.

7. (Original) An LCAL according to Claim 6, wherein the LCAL is capable of emulating a Fresnel phase profile with each subset of closed-loop electrodes comprising a Fresnel zone.

8. (Original) An LCAL according to Claim 7, wherein a phase delay in each Fresnel zone is equal.

9. (Cancelled)

10. (Previously Presented) A method according to Claim 14, wherein creating a plurality of closed-loop electrodes comprises:

forming at least one pair of electrically conductive vias within the insulating layer such that the vias are in electrical contact with a respective pair of conductors; and

producing the plurality of closed-loop electrodes such that at least one closed-loop electrode electrically contacts each via.

11. (Original) A method according to Claim 10, wherein forming the at least one pair of electrically conductive vias comprises:

forming an etch mask defining at least one opening upon the insulating layer;

etching at least one hole within the at least one opening, wherein the at least one hole extends through the insulating layer such that at least a portion of the at least one pair of conductors is exposed; and

depositing an electrically conductive material within the at least one hole such that the electrically conductive material electrically contacts the at least one pair of conductors.

12. (Previously Presented) A method according to Claim 14, wherein creating the plurality of closed-loop electrodes comprises depositing a layer of electrically conductive material upon the insulating layer and thereafter forming the layer of electrically conductive material into the plurality of closed-loop electrodes.

13. (Previously Presented) A method according to Claim 14, wherein creating the plurality of closed-loop electrodes comprises creating the plurality of closed-loop electrodes in a concentric circular pattern.

14. (Previously Presented) A method of fabricating a liquid crystal adaptive lens comprising:

forming at least one pair of conductors upon a substrate;

depositing an insulating layer upon the at least one pair of conductors and the substrate;

creating a plurality of closed-loop electrodes on the insulating layer such that at least one closed-loop electrode is in electrical contact each conductor of the at least one pair of conductors, wherein creating the plurality of closed-loop electrodes further comprises forming at least one connector between at least two closed-loop electrodes;

depositing a layer of liquid crystal upon the plurality of closed-loop electrodes; and

depositing a reference plate upon the layer of liquid crystal.

15. (Cancelled)

16. (Previously Presented) An LCAL system according to Claim 18, wherein said auto-focusing subsystem comprises:

an image source capable of passing light through said LCAL;

an image capture device capable of capturing the light after the light passes through the liquid crystal layer of said LCAL; and

a control element capable of adjusting the variable control voltage to at least one subset of the plurality of closed-loop electrodes of said LCAL to thereby adjust the refractive index of at least a portion of the liquid crystal layer of said LCAL, wherein said control element is capable of adjusting the variable control voltage at least partially based upon a point spread function of the light captured by said image capture device.

17. (Original) An LCAL system according to Claim 16 further comprising:

a lens capable of directing the light in a predetermined direction before the light passes through said LCAL; and

a polarizer capable of polarizing the light in a predefined orientation after said lens directs the light and before the light passes through said LCAL.

18. (Previously Presented) A liquid crystal adaptive lens (LCAL) system comprising:

an LCAL including a reference plate, a liquid crystal layer disposed in electrical communication with the reference plate, a plurality of closed-loop electrodes disposed in electrical communication with the liquid crystal layer, and at least one pair of conductors connected by at least one connector and in electrical contact with at least two closed-loop electrodes, wherein the plurality of closed-loop electrodes are adapted to receive, via the at least one connector, a variable control voltage such that a refractive index of at least a portion of said liquid crystal layer is adjustable such that light passing through the liquid crystal layer is capable of being redirected; and

an auto-focusing subsystem capable of applying the variable control voltage to the conductors of said LCAL, wherein the auto-focusing subsystem is capable of adjusting the variable control voltage to said LCAL to thereby adjust a refractive index of at least a portion of

the liquid crystal layer of said LCAL such that light passing through the liquid crystal layer is capable of being redirected.

19. (Previously Presented) An LCAL system according to Claim 18, wherein said control element is capable of applying a set of control voltages to said LCAL and calculating the point spread function for the light captured by said image capture device at each control voltage, and wherein said control element is capable of adjusting the variable control voltage based on a comparison of the point spread function for the light captured at each control voltage in the set.

20. (Original) An LCAL system according to Claim 19, wherein the plurality of closed-loop electrodes comprise at least one subset of closed-loop electrodes, wherein said control element is capable of applying a set of control voltages to each subset of closed-loop electrodes and thereafter calculating the point spread function for the light captured by said image capture device at each voltage within each set of voltages applied to each subset of closed-loop electrodes, wherein said control element is capable of comparing the point spread function for the light captured at each voltage, and wherein said control element is capable of adjusting the variable control voltage to the plurality of closed-loop electrodes based upon the comparison of the point spread function for the light captured at each control voltage in each set of voltages applied to each subset of closed-loop electrodes.

21. (Previously Presented) A method of focusing a liquid crystal adaptive lens (LCAL) comprising:

providing an LCAL including a reference plate, a liquid crystal layer disposed in electrical communication with the reference plate, a plurality of closed-loop electrodes disposed in electrical communication with the liquid crystal layer, and at least one pair of conductors connected by at least one connector and in electrical contact with at least two closed-loop electrodes;

applying a variable control voltage to a subset of the plurality of closed-loop electrodes of said LCAL via the at least one pair of conductors;

passing light through the liquid crystal layer of the LCAL;

capturing the light after the light passes through the liquid crystal layer of the LCAL;

calculating a point spread function for the light captured; and

adjusting the variable control voltage at least partially based upon the point spread function to thereby adjust a refractive index of at least a portion of the liquid crystal layer such that the light passing through the liquid crystal layer is redirected.

22. (Original) A method according to Claim 21 further comprising:

directing the light in a predetermined direction before passing the light through the LCAL; and

polarizing the light in a predefined orientation after directing the light.

23. (Original) A method according to Claim 21, wherein applying the variable control voltage comprises applying a series of control voltages, wherein capturing the light comprises capturing the light after the light passes through the LCAL at each control voltage, and wherein calculating the point spread function comprises calculating the point spread function for the light captured at each control voltage, said method further comprising:

comparing the point spread function for the light captured at each control voltage before adjusting the variable control voltage, wherein adjusting the variable control voltage is based upon the comparison.

24. (Original) A method according to Claim 23, wherein passing and capturing the light, and calculating and comparing the point spread function repeatedly occur for each subset of the plurality of closed-loop electrodes before adjusting the variable control voltage.